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THE FINE AND INDUSTRIAL ARTS IN ELEMENTARY SCHOOLS

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This article presents some considerations on the place of fine and industrial arts in elementary schools. It is the first of a series in which the work of each grade will be discussed in detail.

The fine and industrial arts are steadily securing recognition as important elements in public education, and as factors necessary to industrial supremacy. In elementary schools only rudiments of these arts can be taught, such as the beginnings of freehand drawing, simple forms of constructive work, and problems in design as related to common things. Careful work in these lines, however, is the best preparation for advanced study, and is also of definite practical value even if instruction ends in the elementary schools.

The different phases of fine and industrial art in public schools may be grouped under the following heads: (1) representation which gives pupils experience with the graphic language used in fine and constructive art; (2) construction which gives acquaintance with the methods employed in crafts and industries and trains that judgment which comes from carrying out the processes by which raw materials are converted into predetermined products; and (3) design which trains the discrimination necessary to choose what is in good taste and to enjoy what is excellent in fine and industrial art.

These phases of manual expression are not separated by sharply defined limits. It is impossible to construct an object without exercising judgment in design, or to design an object satisfactorily without some knowledge of construction and some ability in representation. The school activities continually call for simultaneous work along all three of these lines. In order to insure definite progress, however, it seems necessary to supplement general work in manual expression by special study, which will emphasize particular phases of representation, construction, and design for a period of time, and thus deal with each more thoroughly than is possible when that topic appears incidentally with others. For example, while the material for the larger part of the special study of drawing may be found in the other school subjects, it still remains true that drawing has a content of its own. To obtain the full value of this, some work is occasionally necessary, which does not relate immediately to the description of other school subjects.

The valuable results evident from these three phases of manual expression are as follows: Representation develops ability to image form clearly. If one asks children to draw from memory a supposedly familiar shape, such as the map of the country they are considering in geography, he will probably be surprised at the vague ideas of form which are discovered. If he shows the children the map for a moment, and then, removing it, asks them to draw again, and repeats this a few times, allowing no drawing while the map is in sight, he will again be surprised at the sort of attention given to the map during the brief period, which follows one attempt to draw it, and precedes another effort to reproduce it better. This attention differs greatly from that which is unaccompanied by any necessity of reproducing from memory what has been seen. The image is defined, clarified, and made comparatively permanent.

Children trained to express themselves by drawing, learn to think in terms of form. Drawing from objects requires a selection of the essential features. Out of the bewildering complexity of details which nature presents, one must learn to recognize those which are significant, which if reproduced will represent the object. Such discrimination trains a quality of observation which is likely to remain undeveloped unless awakened by drawing.

Drawing is more completely a convention than is generally supposed. An oriental or an occidental draws each in the way he thinks will represent the form best, yet the results differ remarkably. Each is expressing himself in his own graphic dialect. The appreciation of another people's method of drawing is akin to an appreciation of another language in the revelations it gives of different ways of seeing and thinking. Drawing, as it exists at present, is an evolution. Its vocabulary has been added to by each generation. One imagines that he is expressing himself in terms suggested directly by the object, but this is only partly true. Therefore, drawing an object means translating the aspect of it into terms which demand careful selection.

In addition to these general educational values, elementary representation is of direct industrial, scientific, and aesthetic importance.

To the man engaged in constructive work, drawing offers a means of endless experimentation. Workers in metal or wood, when discussing a mechanical or constructive problem can often present its different possibilities and define the results almost as well by the use of the pencil as by manipulating the actual material. Constructive sketching is also a great stimulus of invention. The more finished working drawings, afford a means of recording all necessary data, regarding form and construction.

A manufacturer thus refers to the value of ability to sketch and draw:

> I wish to emphasize the importance of industrial drawing for the mass of trade workers in these lines of manufacturing where the artistic or aesthetic sense is not supposed to hold a prominent place. For example, in the line of machine building the art of drawing has a very important relation to our industrial future. To this particular class of mechanics drawing has a broad field of usefulness: first, because it is a valuable means of expression. The mechanic who is able to express himself by a rapidly made drawing is inspired thereby to more and better thought. Second, because it opens up for him especially a broad field for experimentation and choice.

When by a sketch the manufacturer or the mechanic can place before himself and others many ways of doing a thing, he at once makes comparisons, and immediately chooses what he deems the best, the fittest, or the most beautiful. He hits the mark after such a comparison, because with his sketches he has tried many schemes and compared them.

Experimentation, comparison, and choice mark the way of advancement. But life is too short to try many experiments, unless the methods of trying them are very simple. To build things of wood and stone and metal in order to test them, and to prove which one is best and fittest, requires too much waste of time and material. But the realm of experimentation that is possible with a pencil is wonderful and fascinating; it is almost as unlimited as is thought itself.

I have asked myself from whence comes this fascination as we find it in the shops; and I think it is because through the art of drawing, by delineating and by designing, the mechanic himself becomes a creator of things. He not only learns to see things emanating from others clearly, but, behold, he finds he can express his own ideas to himself and to others, and above all he recognizes that they are his own evolution.

For mechanics of all grades and ranks the habit of sketching and drawing becomes a great developing force. For a mechanic drawing becomes the avenue out of himself into the universe. He is not only learning about other people and other things as we do in the study of history and geography, but he is revealing himself to himself and to others, and the things revealed are new—new to him and new to the world. This to him is the inspiring quality of his work.[1]

In scientific studies, drawing quickens observation and furnishes a means of making accurate records.

Representation is also the language of the fine arts of painting and sculpture. The regular work in drawing in elementary schools, involving, as it does, continued use of lines, light and dark, and color, is giving children constant practice in expressing their ideas and observations by means of the same vocabulary which the artist himself employs. These attempts to use, even though crudely, the terms by which art is expressed, are necessary to that kind of artistic appreciation which yields the fullest pleasure.

Instructors in drawing must choose between a course planned for the few in every school who have what is commonly called

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[1] From an address by Mr. Milton P. Higgins, president of the Norton Emery Wheel Co., Worcester, Mass., printed in the sixty-eighth *Annual Report* of the Massachusetts State Board of Educaton, 1904.

"talent," and a course planned for the majority of the children, within easy reach of those of no special ability. While any public-school system should ultimately take account of special talent and encourage it, yet in the elementary grades, such work should be planned as will justify itself on general grounds and be valuable for all, whatever their future occupations are to be. The plan of these articles is based upon the second policy, and the work outlined is such as can be taught by the regular grade teacher and well done by as large a proportion of the children as can accomplish the work given in other subjects.

In order to carry out such a plan it is necessary to teach drawing in the most direct and simple way possible, testing all methods by the resulting increase in ability to draw on the part of the majority of the children. A lack of such increase in the many, should be interpreted as a fault of the method rather than of the children. Results have already shown that the majority of children can learn to draw sufficiently well for purposes of ordinary practical expression with pencil or brush, and can be led to appreciate what is in good taste, as readily and generally as they can progress in other studies of the school curriculum. Special talent is no more a factor to be reckoned with in elementary drawing than in elementary language or mathematics.

Constructive work makes possible a proper balance of motor and intellectual activities which is to the advantage of both. School authorities sometimes discuss the question as to whether any time in the burdened school curriculum can be spared for occupations involving muscular activity, and presume to settle the matter by official action. The nature of children has already settled that question in the affirmative. Muscular activity will be an important part of any school programme. The only jurisdiction which the authorities have in the matter is in deciding whether these activities shall hinder or help school work, whether they shall appear as mischief-making or manual arts.

Elementary woodwork gives familiarity with common tools, processes, and materials, and develops a comprehension which every householder should possess of problems of ordinary constructive work. It brings the invigoration of dealing with the unvarying, impartial laws of matter and being compelled to face the obvious fitness or unfitness of visible results. It awakens the healthy pleasure of shaping material to a predetermined form by patience, foresight, and skill.

Constructive work is not only an essential element in general education, valuable alike to the scholar and the artisan, but is also a means of awakening industrial interests and promoting industrial efficiency. The fact that about two-thirds of the school population leave at the end of the eighth grade and go to work should be considered in its full significance by teachers of the manual arts. These children are too young to enter skilled industries. A few rise through any circumstances, but the majority drift from one to another unskilled occupation taking whatever pays best. They spend two important years in employments which present no industrial interests and offer no vocational outlook.

A teacher of manual training who explores industrial life for educational suggestions will often find forms of work-teaching which awaken interest in effective ways of doing things and bring discontent with unskilled work and foster a desire for thorough industrial training.

The study of design in elementary schools should aim first to develop good taste regarding the things which make up the environment of everyday life.

The power to discern between the merely pretty with attractiveness which is superficial and transitory, and that which is permanently and universally beautiful, gives capacity for an enjoyment the possibilities of which are unlimited.

Among the problems in design especially appropriate for public schools are school and home surroundings, the artistic possibilities of the community and of local industries and crafts.

Every home is an example of good or bad taste. Whatever develops aesthetic judgment raises the standard of living. The general appearance of written school work, arrangement of plants and flowers, framing and hanging of pictures, choice of wall papers, rugs, furniture, etc., are among the opportunities for that sense of fitness which is artistic taste.

Unless the problems of design relate to familiar surroundings, pupils are likely to consider the term "artistic" as one which applies only to unusual things, whereas it does not describe the class to which an object belongs, but means that the object, because of its adequacy, and the refinement of its essential parts and proportions, and the grace and fitness of its decoration, if it possesses any, is unusually excellent of its kind. A kitchen chair or utensil may be artistic and thus a source of continual pleasure as truly as may a vase or a picture.

By collections of photographs or other representations children should be interested in ways in which towns and cities are solving the problems of public structures. They should see pictures of the best designs for bridges, water fronts, public buildings and private houses of all classes, park furnishings, sculpture, fountains, and other things which may contribute to beauty in modern communities.

Schools should give some acquaintance with noted examples of drawing, painting, and sculpture. Abundant material is at hand in the shape of photographs, illustrations, and the best of modern color prints.

The main question, however, is not how many pictures can be brought within the child's range of vision, but on how many can his imagination be awakened to lay hold. In the days when pictures were fewer, a child would often pore for a long time over some poor print till his imagination wandered far into its perspective and lived with its characters. Such a print grew to be so full of suggestion that in later years the grown man hesitated to throw it away even after he had come to see its artistic worthlessness. Even the wayward cracks in the walls of old bare schoolrooms became interesting to the imaginations of children who pictured scenes among them as one sees constellations in the stars.

When imagination can be set at play under the stimulus and direction of a good picture, feelings may be awakened that later may develop into aesthetic enjoyment.

Many small pictures distract the attention of the pupils. Two or three excellent pictures in a classroom, appropriately chosen and carefully hung, usually have a finer influence and give more enduring memories than a large number scattered about the walls.

The fine and industrial arts are taught in schools because of their close relation and definite value to the life and work of people at large. During the past few years there has been steady improvement in the quality of instruction and an excellent foundation for further progress has been laid.

We are confronted, however, with the somewhat surprising fact that in many cities and towns people who as children have spent eight years in the elementary schools and four years in high school, and have studied drawing and constructive work during most of the time, are unable to use drawing at all freely or correctly. They find that their public-school course has added little to their natural ability to choose things in good taste in dress and home furnishings, and this course has increased but slightly their appreciation of works of art. In industrial fields, employers say that boys come to them after a study of constructive work and working drawing taken in grammar schools and high schools, exhibiting a lack of ability to read plans and blue prints. College professors remark that students from these same schools have no skill in delineation of form and cannot make accurate graphic records of observations. Even those who have attended normal schools and have become teachers often confess that they cannot draw and hesitate to use the blackboard for purposes of illustration. These facts justify a careful consideration of the purpose and scope of these subjects in elementary schools, and of the most effective methods of accomplishing the aims in view.

One reason for the tardiness with which these conditions are disappearing is that the problems for manual expression have too often been artificial. Two influences will contribute toward more effective teaching: (1) Supervisors of manual arts who are students of the aim and spirit of the school curriculum as a whole. To such a supervisor the general teachers' meetings held by the superintendent will be as valuable to him as to the grade teachers. He will gather hints from superintendent, from teachers, from the children in their work and play and home life, and from the local industries and the needs of those engaged in them; and from the natural and architectural features of the town. These will modify his work, which will aim to present what the arts have to offer in promoting industry and making life more enjoyable. (2) Grade teachers who make use of manual expression in school work. In promoting drawing for instance, the most effective influence is the example of a teacher who is accustomed to draw on the board before the children. Compared with the effect of this, methods and courses without such example are of secondary importance. We must look to the normal schools for training which will lead teachers to use the arts in this way. The place of the arts in school is realized by the teacher who found them necessary and helpful to his own general work and standing in the normal school. Teachers thus trained cease to regard as specialties such beginnings of the arts as are appropriate to elementary schools. The study of these becomes a simple and natural training in one of the fundamental requisites of civilization.